

Title (en)
OPTICAL COMMUNICATION SYSTEM USING MODE-LOCKED FREQUENCY COMB AND ALL-OPTICAL PHASE ENCODING FOR SPECTRAL AND TEMPORAL ENCRYPTED AND STEALTHY TRANSMISSION, AND FOR OPTICAL PROCESSING-GAIN APPLICATIONS

Title (de)
OPTISCHES ÜBERTRAGUNGSSYSTEM MIT MODENGEKOPPELTEM FREQUENZKAMM UND REIN OPTISCHER PHASENKODIERUNG FÜR SPEKTRALE UND ZEITLICHE VERSCHLÜSSELTE UND GEHEIME ÜBERTRAGUNG SOWIE FÜR OPTISCHE VERARBEITUNGSGEWINNANWENDUNGEN

Title (fr)
SYSTÈME DE COMMUNICATION OPTIQUE UTILISANT UN PEIGNE DE FRÉQUENCE À VERROUILLAGE DE MODE ET UN CODAGE DE PHASE TOUT OPTIQUE POUR ÉMISSION CRYPTÉE SPECTRALE ET TEMPORELLE ET POUR APPLICATIONS DE GAIN DE TRAITEMENT OPTIQUE

Publication
EP 3997813 A4 20230726 (EN)

Application
EP 20840096 A 20200714

Priority
• US 201962873912 P 20190714
• IL 2020050788 W 20200714

Abstract (en)
[origin: WO2021009754A1] A method for transmitting data carrying optical information over an optical channel, comprising the steps of providing an optical transmitter consisting of a light source being a Mode-Locked Optical Frequency Comb (MLFC) for generating a frequency comb of multiple carriers, each of which being modulated by a baseband signal; an optical modulator for modulating each and all of the multiple carriers in a modulation bandwidth extending up to the modes' frequency spacing between the multiple carriers; performing all-optical encoding of the modulated carriers by manipulating the optical amplitude and/or phase and/or polarization of all optically modulated carriers; and transmitting, by the optical transmitter, the encoded modulated carriers to an optical receiver, over an optical channel.

IPC 8 full level
H04B 10/50 (2013.01); **H04B 10/63** (2013.01); **H04B 10/66** (2013.01); **H04B 10/85** (2013.01); **H04K 1/00** (2006.01); **H04K 1/02** (2006.01); **H04K 1/08** (2006.01); **H04K 1/10** (2006.01); **H04K 1/04** (2006.01)

CPC (source: EP IL US)
H04B 10/506 (2013.01 - EP IL); **H04B 10/54** (2013.01 - US); **H04B 10/63** (2013.01 - EP IL); **H04B 10/66** (2013.01 - EP IL); **H04B 10/85** (2013.01 - EP IL US); **H04K 1/006** (2013.01 - EP IL); **H04K 1/02** (2013.01 - EP IL); **H04K 1/04** (2013.01 - IL); **H04K 1/08** (2013.01 - EP IL); **H04K 1/10** (2013.01 - EP IL); **H04K 1/04** (2013.01 - EP)

Citation (search report)
• [XII] US 2010091990 A1 20100415 - ETEMAD SHAHAB [US], et al
• [XI] WO 2010033286 A1 20100325 - TELCORDIA TECH INC [US], et al
• [XI] COOPER A B ET AL: "Phase and Polarization Diversity for Minimum MAI in OCDMA Networks", IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS, IEEE, USA, vol. 13, no. 5, September 2007 (2007-09-01), pages 1386 - 1395, XP011193964, ISSN: 1077-260X, DOI: 10.1109/JSTQE.2007.903873
• See also references of WO 2021009754A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
WO 2021009754 A1 20210121; EP 3997813 A1 20220518; EP 3997813 A4 20230726; IL 289775 A 20220301; US 11641241 B2 20230502; US 2022360337 A1 20221110

DOCDB simple family (application)
IL 2020050788 W 20200714; EP 20840096 A 20200714; IL 28977522 A 20220111; US 202017626905 A 20200714